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EXAMINER

OCHOA, JUAN CARLOS

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/802,921	Applicant(s) LEE ET AL.	
	Examiner JUAN C. OCHOA	Art Unit 2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-73 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-73 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The interview conducted 03 March 2008 has been considered. The amendment filed 04 February 2008 has been received and considered. Claims 1–73 are presented for examination.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/3/08 has been entered.

Claim Interpretation

3. Office personnel are to give claims their "broadest reasonable interpretation" in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See *also In re Zletz, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) ("During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow").... The reason is simply that during patent prosecution when claims can be amended, ambiguities should be

recognized, scope and breadth of language explored, and clarification imposed.... An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 10–15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noma et al. (Noma hereinafter), Pre–Grant publication 20040010398 (see PTO-892 Notice of Reference Cited dated 3/12/07) taken in view of Lohmann et al., (Lohmann hereinafter), Pre–Grant publication 20020026296 (see PTO-892 Notice of Reference Cited dated 3/12/07).

8. As to claim 10, Noma discloses a computer-implemented method (see paragraph [0001]) for designing an interior section of a passenger vehicle to accommodate objects for the interior section of the passenger vehicle (see paragraph [0005], lines 9–16), comprising a) storing a digital definition of the interior section of the passenger vehicle and parameters related to the objects (see paragraphs [0092]–[0094] and [0203]); b) displaying a visual model of the interior section of the passenger vehicle (see paragraph [0075], last line and “FIG. 3 shows a display screen example when a reference model built by the reference model building program 62 is displayed on the display unit 17 by the display program 65” in paragraph [0079]); c) receiving user input from a user reflecting a first change to the interior section of the passenger vehicle (see paragraph [0075], next to last line); d) determining in response to the user input and said digital definition and said parameters whether a second change to the interior section of the passenger vehicle is necessary because of the first change to the interior section of the passenger vehicle (see “the program receives user's inputs using the

pointing device, determines a portion and its deformation contents designated by an input command, and changes coordinate data in accordance with the command” in paragraph [0206]), and e) executing the second change to the interior section of the passenger vehicle by updating said digital definition (see Fig. 26, item Nos. S14, S15, and S17).

9. While Noma discloses determining whether a second change to the interior section of the passenger vehicle is necessary because of the first change to the interior section of the passenger vehicle and execute the second change to the interior section of the passenger vehicle by updating said digital definition, Noma fails to disclose fully automating the arranging of interior objects while checking clearances and certification requirements for the entire interior whenever a change is made.

10. Lohmann discloses a method further comprising of fully automating the arranging of interior objects while checking clearances and certification requirements for the entire interior whenever a change is made (see paragraph [0032]).

11. Noma and Lohmann are analogous art because they are related to arrangement of passenger seats in an airplane/vehicle.

12. Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to utilize the feature of Lohmann in the system of Noma because Lohmann develops a method whereby production documents (such as drawings, parts lists, supplementing or completing evaluations, e.g. device and equipment lists or mass distribution plans) are automatically prepared (see paragraph [0008]), and as a result, Lohmann reports the following improvements over his prior art:

automatically define the spatial arrangement of structural components relative to each other, and the optimization thereof with respect to their functional positions (for example the visibility and/or reachability of components that must be accessed by passengers) and/or with respect to regulations and other requirements limiting the allowable arrangements, and/or with respect to the quantity or number of the components, i.e. an automated method in which the constantly repeated special knowledge of the designer and builder of a component arrangement (such as an aircraft cabin) is formulated as a system of data and rules, which is then documented and can be repeatedly called-up and applied as needed in an automated manner for repetitious similar applications or other applications that share similar components, restrictions, and the like (see paragraph [0032]).

13. As to claim 11, Noma discloses a method wherein said digital definition comprises a plurality of data objects representing different aspects of the interior/configurable space (see paragraphs [0092]–[0094] and [0203]), an object placing sequence including every object in the system having a zone that defines the boundaries within which it can be placed, accommodating full automation.

14. As to claim 12, Noma discloses a method wherein a first one of said data objects contains information regarding a second data object representing an aspect of the interior/configurable space that has a relationship with an aspect of the interior/configurable space represented by said first data object (see “determining the horizontal position of the driver's hip point HP1” in paragraphs [0155] and [0156]).

15. As to claim 13, Noma discloses a method wherein said processor is capable of modifying said second data object in response to a change made by the system to said first data object, and said processor uses said information regarding said second data object to determine whether said second data object should be modified (see “the program receives user’s inputs using the pointing device, determines a portion and its deformation contents designated by an input command, and changes coordinate data in accordance with the command” in paragraph [0206] and paragraph [0313]).

16. As to claim 14, Noma discloses a method wherein each of said data objects has one of a plurality of types, and a first of said types represents a first portion of the vehicle/configurable space that is fully contained within a second portion of the vehicle/configurable space represented by a second of said types (see paragraphs [0317] and [0318]).

17. As to claim 15, Lohmann discloses exporting a portion of said digital definition in a format that can be used with a computer-aided design system (see “the database 18 contains all data or parameters necessary for completely describing or defining all relevant cabin components and installations for a prescribed project, on which all of the modules are working concurrently or in common” paragraph [0030], lines 1–14 and “This solution proposal, which has been modified as necessary, is further coupled to a computer aided design (CAD) system 20 through a plot script which is not illustrated, i.e. the solution proposal is transferred to a parallel operating CAD system 20, where it is displayed and then output as a substantially conventional drawing. The parts lists 24 and the production contracts 25 are also output and transferred through respective

defined interfaces automatically into the available parts list system 21 and the production planning system 22” in paragraph [0031]).

18. Claims 1–7, 27–32, 35–41, 44–49, 52–58, 61–66, and 69–73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noma taken in view of Lohmann as applied to claim 10 above, and further in view of Weber et al., (Weber hereinafter), U.S. Patent 6,113,644 (see PTO-892 Notice of Reference Cited dated 3/12/07).

19. As to claim 1, Noma discloses a computer-implemented system for designing an interior section of a passenger vehicle to accommodate objects for the interior section of the passenger vehicle (see paragraph [0005], lines 9–16), comprising a) a database comprising a digital definition of the interior section of the passenger vehicle and parameters related to the objects (see paragraphs [0092]–[0094] and [0203]); b) a computer-aided design system configured to display a visual model of the interior section of the passenger vehicle (see paragraph [0075], last line and “FIG. 3 shows a display screen example when a reference model built by the reference model building program 62 is displayed on the display unit 17 by the display program 65” in paragraph [0079]); c) a user interface capable of receiving user input from a user reflecting a first change to the interior section of the passenger vehicle (see paragraph [0075], next to last line); d) a processor responsive to the user input by using said digital definition and said parameters to (i) determine whether a second change to the interior section of the passenger vehicle is necessary because of the first change to the interior section of the passenger vehicle (see “the program receives user's inputs using the pointing device,

determines a portion and its deformation contents designated by an input command, and changes coordinate data in accordance with the command” in paragraph [0206]), and (ii) execute the second change to the interior section of the passenger vehicle by updating said digital definition (see Fig. 26, item Nos. S14, S15, and S17).

While Noma discloses determining whether a second change to the interior section of the passenger vehicle is necessary because of the first change to the interior section of the passenger vehicle and execute the second change to the interior section of the passenger vehicle by updating said digital definition, Noma fails to disclose determining **automatically** whether a second change to the interior section of the passenger vehicle is necessary because of the first change to the interior section of the passenger vehicle and execute **automatically** the second change to the interior section of the passenger vehicle by updating said digital definition.

Lohmann discloses determining **automatically** whether a second change to the interior section of the passenger vehicle is necessary because of the first change to the interior section of the passenger vehicle and execute **automatically** the second change to the interior section of the passenger vehicle by updating said digital definition (see paragraph [0032]). Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to utilize the feature of Lohmann in the system of Noma because Lohmann develops a method whereby production documents (such as drawings, parts lists, supplementing or completing evaluations, e.g. device and equipment lists or mass distribution plans) are automatically prepared (see paragraph [0008]), and as a result, Lohmann reports the following improvements over his prior art:

automatically define the spatial arrangement of structural components relative to each other, and the optimization thereof with respect to their functional positions (for example the visibility and/or reachability of components that must be accessed by passengers) and/or with respect to regulations and other requirements limiting the allowable arrangements, and/or with respect to the quantity or number of the components, i.e. an automated method in which the constantly repeated special knowledge of the designer and builder of a component arrangement (such as an aircraft cabin) is formulated as a system of data and rules, which is then documented and can be repeatedly called-up and applied as needed in an automated manner for repetitious similar applications or other applications that share similar components, restrictions, and the like (see paragraph [0032]).

20. While the Noma–Lohmann system designs an interior section of a passenger vehicle to accommodate objects for the interior section of the passenger vehicle, the Noma–Lohmann system lacks zones being arranged in a hierarchy wherein each zone represents a smaller portion of the vehicle, and there is at least one or more smaller zones inside a larger zone.

21. Weber discloses a system further comprising of a means for zones being arranged in a hierarchy wherein each zone represents a smaller portion of the vehicle, and there is at least one or more smaller zones inside a larger zone (see col. 6, lines 10–21).

22. Noma, Lohmann, and Weber are analogous art because they are related to arrangement of passenger seats in an airplane/vehicle.

23. Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to utilize the zones of Weber in the Noma–Lohmann system because Weber develops occupant reach based computer aided automotive vehicle design (see col. 1, lines 7–8), and as a result, Weber reports the following improvements over his prior art: allowing a vehicle designer to determine occupant reach interaction between computer electronic representations of the occupant and the vehicle, or systems on the vehicle and to conduct human factors ergonomic reach studies for both right and left hand drive vehicles (see col. 12, lines 48–58).

24. As to claim 27, Noma discloses a computer-readable medium having computer-executable instructions (see paragraph [0001]) for performing a method performed for designing an interior section of a passenger vehicle to accommodate objects for the interior section of the passenger vehicle (see paragraph [0005], lines 9–16) for manufacture of the passenger vehicle, comprising a) a database comprising a digital definition of the interior section of the passenger vehicle and parameters related to the objects (see paragraphs [0092]–[0094] and [0203]); b) a computer-aided design system configured to display a visual model of the interior section of the passenger vehicle (see paragraph [0075], last line and “FIG. 3 shows a display screen example when a reference model built by the reference model building program 62 is displayed on the display unit 17 by the display program 65” in paragraph [0079]); c) a user interface capable of receiving user input from a user reflecting a first change to the interior section of the passenger vehicle (see paragraph [0075], next to last line); d) a processor responsive to the user input by using said digital definition and said

parameters to (i) determine whether a second change to the interior section of the passenger vehicle is necessary because of the first change to the interior section of the passenger vehicle (see “the program receives user's inputs using the pointing device, determines a portion and its deformation contents designated by an input command, and changes coordinate data in accordance with the command” in paragraph [0206]), and (ii) execute the second change to the interior section of the passenger vehicle by updating said digital definition (see Fig. 26, item Nos. S14, S15, and S17) for manufacture of the passenger vehicle. Lohmann discloses determining whether a second change to the interior section of the passenger vehicle is necessary because of the first change to the interior section of the passenger vehicle, executing the second change to the interior section of the passenger vehicle by updating said digital definition, and fully automating the arranging of interior objects while checking clearances and certification requirements for the entire interior whenever a change is made (see paragraph [0032]). Weber discloses zones being arranged in a hierarchy wherein each zone represents a smaller portion of the vehicle, and there is at least one or more smaller zones inside a larger zone (see col. 6, lines 10–21).

25. As to claim 35, Noma discloses a computer-implemented system for designing a configurable space to accommodate objects for the interior section of the passenger vehicle (see paragraph [0005], lines 9–16), comprising a) a database comprising a digital definition of the interior section of the passenger vehicle and parameters related to the objects (see paragraphs [0092]–[0094] and [0203]); b) a computer-aided design system configured to display a visual model of the interior section of the passenger

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vehicle (see paragraph [0075], last line and “FIG. 3 shows a display screen example when a reference model built by the reference model building program 62 is displayed on the display unit 17 by the display program 65” in paragraph [0079]); c) a user interface capable of receiving user input from a user reflecting a first change to the interior section of the passenger vehicle (see paragraph [0075], next to last line); d) a processor responsive to the user input by using said digital definition and said parameters to (i) determine whether a second change to the interior section of the passenger vehicle is necessary because of the first change to the interior section of the passenger vehicle (see “the program receives user's inputs using the pointing device, determines a portion and its deformation contents designated by an input command, and changes coordinate data in accordance with the command” in paragraph [0206]), and (ii) execute the second change to the interior section of the passenger vehicle by updating said digital definition (see Fig. 26, item Nos. S14, S15, and S17). Lohmann discloses determining **automatically** whether a second change to the interior section of the passenger vehicle is necessary because of the first change to the interior section of the passenger vehicle and execute **automatically** the second change to the interior section of the passenger vehicle by updating said digital definition (see paragraph [0032]). Weber discloses a system further comprising of a means for zones being arranged in a hierarchy wherein each zone represents a smaller portion of the vehicle, and there is at least one or more smaller zones inside a larger zone (see col. 6, lines 10–21).

26. As to claim 44, Noma discloses a computer-implemented method for designing a configurable space to accommodate objects for the configurable space (see paragraph [0005], lines 9–16), comprising a) storing a digital definition of the configurable space and parameters related to the objects (see paragraphs [0092]–[0094] and [0203]); b) displaying a visual model of the configurable space (see paragraph [0075], last line and “FIG. 3 shows a display screen example when a reference model built by the reference model building program 62 is displayed on the display unit 17 by the display program 65” in paragraph [0079]); c) receiving user input from a user reflecting a first change to the configurable space (see paragraph [0075], next to last line); d) determining in response to the user input and said digital definition and said parameters whether a second change to the configurable space is necessary because of the first change to the configurable space (see “the program receives user's inputs using the pointing device, determines a portion and its deformation contents designated by an input command, and changes coordinate data in accordance with the command” in paragraph [0206]); and e) executing the second change to the configurable space by updating said digital definition (see Fig. 26, item Nos. S14, S15, and S17). Lohmann discloses fully automating the arranging of interior objects while checking clearances and certification requirements for the entire interior whenever a change is made (see paragraph [0032]). Weber discloses arranging the digital definitions into zones and the zones being arranged in a hierarchy wherein each zone represents a smaller portion of the vehicle, and there is at least one or more smaller zones inside a larger zone (see col. 6, lines 10–21).

27. As to claim 52, Noma discloses a computer-implemented system for designing a configurable space to accommodate objects for the interior section of the passenger vehicle (see paragraph [0005], lines 9–16), comprising a) means for storing a digital definition of the configurable space and parameters related to the objects (see paragraphs [0092]–[0094] and [0203]); b) means for displaying a visual model of the configurable space (see paragraph [0075], last line and “FIG. 3 shows a display screen example when a reference model built by the reference model building program 62 is displayed on the display unit 17 by the display program 65” in paragraph [0079]); c) means for receiving user input from a user reflecting a first change to the configurable space (see paragraph [0075], next to last line); d) means for determining in response to the user input and said digital definition whether a second change to the configurable space is necessary because of the first change to the configurable space (see “the program receives user’s inputs using the pointing device, determines a portion and its deformation contents designated by an input command, and changes coordinate data in accordance with the command” in paragraph [0206]) and e) means for executing the second change to the configurable space by updating said digital definition (see Fig. 26, item Nos. S14, S15, and S17). Lohmann discloses determining in response to the user input and said digital definition whether a second change to the configurable space is necessary because of the first change to the configurable space, executing the second change to the configurable space by updating said digital definition, and fully automating the arranging of interior objects while checking clearances and certification requirements for the entire interior whenever a change is made (see paragraph [0032]).

Weber discloses means for zones being arranged in a hierarchy wherein each zone represents a smaller portion of the vehicle, and there is at least one or more smaller zones inside a larger zone (see col. 6, lines 10–21).

28. As to claim 61, Noma discloses a computer-readable medium comprising code capable of instructing a computer to perform a method for designing a configurable space to accommodate objects for the configurable space (see paragraph [0005], lines 9–16), said method comprising the steps of: a) storing a digital definition of the configurable space and parameters related to the objects (see paragraphs [0092]–[0094] and [0203]); b) displaying a visual model of the configurable space (see paragraph [0075], last line and “FIG. 3 shows a display screen example when a reference model built by the reference model building program 62 is displayed on the display unit 17 by the display program 65” in paragraph [0079]); c) receiving user input from a user reflecting a first change to the configurable space (see paragraph [0075], next to last line); d) determining in response to the user input and said digital definition and parameters whether a second change to the configurable space is necessary because of the first change to the configurable space (see “the program receives user's inputs using the pointing device, determines a portion and its deformation contents designated by an input command, and changes coordinate data in accordance with the command” in paragraph [0206]) and e) executing the second change to the configurable space by updating said digital definition. (See Fig. 26, item Nos. S14, S15, and S17).

Lohmann discloses **automatically** determining in response to the user input and said digital definition and parameters whether a second change to the configurable space is

necessary because of the first change to the configurable space; **automatically** executing the second change to the configurable space by updating said digital definition; fully automating the arranging of interior objects while checking clearances and certification requirements for the entire interior whenever a change is made; and an object placing sequence including every object in the system having a zone that defines the boundaries within which it can be placed, accommodating full automation (see paragraph [0032]). Weber discloses arranging the digital definitions into zones and the zones being arranged in a hierarchy wherein each zone represents a smaller portion of the vehicle, and there is at least one or more smaller zones inside a larger zone (see col. 6, lines 10–21).

29. As to claims 2 and 62, Noma discloses a system wherein said digital definition comprises a plurality of data objects representing different aspects of the interior/configurable space (see paragraphs [0092]–[0094] and [0203]).

30. As to claims 3, 29, 37, 54, and 63, Noma discloses a system wherein a first one of said data objects contains information regarding a second data object representing an aspect of the interior/configurable space that has a relationship with an aspect of the interior/configurable space represented by said first data object (see “determining the horizontal position of the driver's hip point HP1” in paragraphs [0155] and [0156]).

31. As to claims 4, 30, 38, 55, and 64, Noma discloses a system wherein said processor is capable of modifying said second data object in response to a change made by the system to said first data object, and said processor uses said information regarding said second data object to determine whether said second data object should

be modified (see “the program receives user's inputs using the pointing device, determines a portion and its deformation contents designated by an input command, and changes coordinate data in accordance with the command” in paragraph [0206] and paragraph [0313]).

32. As to claims 5, 31, 39, 56, and 65, Noma discloses a system wherein each of said data objects has one of a plurality of types, and a first of said types represents a first portion of the vehicle/configurable space that is fully contained within a second portion of the vehicle/configurable space represented by a second of said types (see paragraphs [0317] and [0318]).

33. As to claims 6, 40, and 57, Noma discloses a system wherein said processor is capable of responding to a change to a data object having said first type and said processor is capable of responding to a change to a data object having said second type (see paragraphs [0317] and [0318]).

34. As to claims 7, 32, 41, and 58, Lohmann discloses means for exporting a portion of the contents of said database in a format that can be used with/by a computer-aided design system different from said computer aided design system of said system (see “the database 18 contains all data or parameters necessary for completely describing or defining all relevant cabin components and installations for a prescribed project, on which all of the modules are working concurrently or in common” paragraph [0030], lines 1–14 and “This solution proposal, which has been modified as necessary, is further coupled to a computer aided design (CAD) system 20 through a plot script which is not illustrated, i.e. the solution proposal is transferred to a parallel operating CAD

system 20, where it is displayed and then output as a substantially conventional drawing. The parts lists 24 and the production contracts 25 are also output and transferred through respective defined interfaces automatically into the available parts list system 21 and the production planning system 22” in paragraph [0031]).

35. As to claims 28 and 36, Noma discloses a computer-readable medium having computer-executable instructions and a system for performing a method wherein said digital definition comprises a plurality of data objects representing different aspects of the interior/configurable space (see paragraphs [0092]–[0094] and [0203]), an object placing sequence including every object in the system having a zone that defines the boundaries within which it can be placed, accommodating full automation.

36. As to claim 36, Noma discloses a system wherein said digital definition comprises a plurality of data objects representing different aspects of the interior/configurable space (see paragraphs [0092]–[0094] and [0203]), an object placing sequence including every object in the system having a zone that defines the boundaries within which it can be placed, accommodating full automation.

37. As to claim 45, Noma discloses a method wherein said digital definition comprises a plurality of data objects representing different aspects of the interior/configurable space (see paragraphs [0092]–[0094] and [0203]), an object placing sequence including every object in the system having a zone that defines the boundaries within which it can be placed, accommodating full automation.

38. As to claim 46, Noma discloses a method wherein a first one of said data objects contains information regarding a second data object representing an aspect of the

interior/configurable space that has a relationship with an aspect of the interior/configurable space represented by said first data object (see “determining the horizontal position of the driver's hip point HP1” in paragraphs [0155] and [0156]).

39. As to claim 47, Noma discloses a method wherein said processor is capable of modifying said second data object in response to a change made by the system to said first data object, and said processor uses said information regarding said second data object to determine whether said second data object should be modified (see “the program receives user's inputs using the pointing device, determines a portion and its deformation contents designated by an input command, and changes coordinate data in accordance with the command” in paragraph [0206] and paragraph [0313]).

40. As to claim 48, Noma discloses a method wherein each of said data objects has one of a plurality of types, and a first of said types represents a first portion of the vehicle/configurable space that is fully contained within a second portion of the vehicle/configurable space represented by a second of said types (see paragraphs [0317] and [0318]).

41. As to claim 49, this claim recites a method performed by the system of claim 41. Noma discloses a method (see paragraph [0001]) performed by the system that teaches claim 41. Therefore, claim 49 is rejected for the same reasons given above.

42. As to claim 53, Noma discloses a system wherein said digital definition comprises a plurality of data objects representing different aspects of the interior/configurable space (see paragraphs [0092]–[0094] and [0203]), an object

placing sequence including every object in the system having a zone that defines the boundaries within which it can be placed, accommodating full automation.

43. As to claim 66, Lohmann discloses a system further comprising a means for exporting a portion of the contents of said database in a format that can be used with/by a computer-aided design system different from said computer aided design system of said system (see “the database 18 contains all data or parameters necessary for completely describing or defining all relevant cabin components and installations for a prescribed project, on which all of the modules are working concurrently or in common” paragraph [0030], lines 1–14 and “This solution proposal, which has been modified as necessary, is further coupled to a computer aided design (CAD) system 20 through a plot script which is not illustrated, i.e. the solution proposal is transferred to a parallel operating CAD system 20, where it is displayed and then output as a substantially conventional drawing. The parts lists 24 and the production contracts 25 are also output and transferred through respective defined interfaces automatically into the available parts list system 21 and the production planning system 22” in paragraph [0031]), and further comprising an object placing sequence including every object in the system having a zone that defines the boundaries within which it can be placed, accommodating full automation.

44. As to claim 69, Lohmann discloses a system further comprised of the passenger vehicle being an airplane. (See paragraph [0001], lines 7–9).

45. As to claim 70, Weber discloses a system further comprising of a means for zones being arranged in a hierarchy wherein each zone represents a smaller portion of

the vehicle, and there is at least one or more smaller zones inside a larger zone (see col. 6, lines 10–21).

46. As to claim 71, Lohmann discloses a system further comprising of saving the relationship of other objects including seats and other objects including monuments in the database (see paragraph [0030]).

47. As to claim 72, Lohmann discloses a system further comprising of an object placing sequence including every object in the system having a zone that defines the boundaries within which it can be placed, accommodating full automation (see paragraph [0032]).

48. As to claim 73, Lohmann discloses a system further comprising of fully automating the arranging of interior objects while checking clearances and certification requirements for the entire interior whenever a change is made (see paragraph [0032]).

49. Claims 8, 9, 33, 34, 42, 43, 50, 51, 59, 60, 67, and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noma taken in view of Lohmann further in view of Weber as applied to claims 1, 27, 35, 44, 52, and 61 above, and further in view of Robert Brauer, (Brauer hereinafter), U.S. Patent 5,611,503. (See PTO-892 Notice of Reference Cited dated 3/12/07).

50. As to claims 8, 33, 42, 50, 59, and 67, while the Noma–Lohmann–Weber system designs an interior section of a passenger vehicle to accommodate objects for the interior section of the passenger vehicle, the Noma–Lohmann–Weber system lacks

determining the maximum number of seats that can fit in a section of the interior/configurable space.

51. Brauer discloses a system further comprising a means for determining the maximum number of seats that can fit in a section of the interior/configurable space, based on said parameters and the location of other objects in the interior (see claim 13).

52. Noma, Lohmann, Weber, and Brauer are analogous art because they are related to arrangement of passenger seats in an airplane/vehicle.

53. Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to utilize the determination of maximum number of seats of Brauer in the Noma–Lohmann–Weber system because Brauer develops a method for increasing passenger seating comfort at typical load factors, relative to that achieved using his prior art with seats of substantially equal dimensions and in an airplane of fixed dimensions with a fixed number of seats (see col. 2, lines 18–26), and as a result, Brauer reports the following improvements over his prior art: producing seating configurations fully compliant with applicable FAA regulations, and seating arrangements which are more comfortable for passengers in an airplane of fixed dimensions and seat type at typical load factors because more passengers are seated next to an empty seat (see col. 16, line 64 to col. 17, line 4).

54. As to claims 9, 34, 42, 43, 51, 60, and 68, Brauer discloses a system further comprising a means for determining a course of action that, if taken, will allow the addition of one extra row of seats, while maintaining compliance with said parameters (see claim 13).

55. Claims 16 and 17, are rejected under 35 U.S.C. 103(a) as being unpatentable over Noma taken in view of Lohmann as applied to claim 10 above, and further in view of Brauer.

56. As to claim 16, while the Noma–Lohmann method designs an interior section of a passenger vehicle to accommodate objects for the interior section of the passenger vehicle, the Noma–Lohmann method lacks determining the maximum number of seats that can fit in a section of the interior.

57. Brauer discloses a method further comprising a means for determining the maximum number of seats that can fit in a section of the interior, based on said parameters and the location of other objects in the interior (see claim 13).

58. Noma, Lohmann, and Brauer are analogous art because they are related to arrangement of passenger seats in an airplane/vehicle.

59. Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to utilize the determination of maximum number of seats of Brauer in the Noma–Lohmann method because Brauer develops a method for increasing passenger seating comfort at typical load factors, relative to that achieved using his prior art with seats of substantially equal dimensions and in an airplane of fixed dimensions with a fixed number of seats (see col. 2, lines 18–26), and as a result, Brauer reports the following improvements over his prior art: producing seating configurations fully compliant with applicable FAA regulations, and seating arrangements which are more comfortable for passengers in an airplane of fixed

dimensions and seat type at typical load factors because more passengers are seated next to an empty seat (see col. 16, line 64 to col. 17, line 4).

60. As to claim 17, Brauer discloses a method further comprising a means for determining a course of action that, if taken, will allow the addition of one extra row of seats, while maintaining compliance with said parameters (see claim 13).

61. Claims 18–23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noma taken in view Weber.

62. As to claim 18, Noma discloses a computer-implemented system (see paragraph [0001]) for designing an interior section of a passenger vehicle to accommodate objects for the interior section of the passenger vehicle (see paragraph [0005], lines 9–16), comprising a) storing a digital definition of the interior section of the passenger vehicle and parameters related to the objects (see paragraphs [0092]–[0094] and [0203]); b) displaying a visual model of the interior section of the passenger vehicle (see paragraph [0075], last line and “FIG. 3 shows a display screen example when a reference model built by the reference model building program 62 is displayed on the display unit 17 by the display program 65” in paragraph [0079]); c) receiving user input from a user reflecting a first change to the interior section of the passenger vehicle (see paragraph [0075], next to last line); d) determining in response to the user input and said digital definition and said parameters whether a second change to the interior section of the passenger vehicle is necessary because of the first change to the interior section of the passenger vehicle (see “the program receives user's inputs using the

pointing device, determines a portion and its deformation contents designated by an input command, and changes coordinate data in accordance with the command” in paragraph [0206]), and e) executing the second change to the interior section of the passenger vehicle by updating said digital definition (see Fig. 26, item Nos. S14, S15, and S17).

63. While Noma discloses determining whether a second change to the interior section of the passenger vehicle is necessary because of the first change to the interior section of the passenger vehicle and execute the second change to the interior section of the passenger vehicle by updating said digital definition, Noma fails to disclose zones being arranged in a hierarchy wherein each zone represents a smaller portion of the vehicle, and there is at least one or more smaller zones inside a larger zone.

64. Weber discloses a system further comprising of a means for zones being arranged in a hierarchy wherein each zone represents a smaller portion of the vehicle, and there is at least one or more smaller zones inside a larger zone (see col. 6, lines 10–21).

65. Noma and Weber are analogous art because they are related to arrangement of passenger seats in an airplane/vehicle.

66. Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to utilize the zones of Weber in the Noma system because Weber develops occupant reach based computer aided automotive vehicle design (see col. 1, lines 7–8), and as a result, Weber reports the following improvements over his prior art: allowing a vehicle designer to determine occupant reach interaction between

computer electronic representations of the occupant and the vehicle, or systems on the vehicle and to conduct human factors ergonomic reach studies for both right and left hand drive vehicles (see col. 12, lines 48–58).

67. As to claim 19, Noma discloses a system wherein said digital definition comprises a plurality of data objects representing different aspects of the interior/configurable space (see paragraphs [0092]–[0094] and [0203]).

68. As to claim 20, Noma discloses a system wherein a first one of said data objects contains information regarding a second data object representing an aspect of the interior/configurable space that has a relationship with an aspect of the interior/configurable space represented by said first data object (see “determining the horizontal position of the driver's hip point HP1” in paragraphs [0155] and [0156]).

69. As to claim 21, Noma discloses a system wherein said processor is capable of modifying said second data object in response to a change made by the system to said first data object, and said processor uses said information regarding said second data object to determine whether said second data object should be modified (see “the program receives user's inputs using the pointing device, determines a portion and its deformation contents designated by an input command, and changes coordinate data in accordance with the command” in paragraph [0206] and paragraph [0313]).

70. As to claim 22, Noma discloses a system wherein each of said data objects has one of a plurality of types, and a first of said types represents a first portion of the vehicle/configurable space that is fully contained within a second portion of the

vehicle/configurable space represented by a second of said types (see paragraphs [0317] and [0318]).

71. As to claim 23, Noma discloses a system wherein said processor is capable of responding to a change to a data object having said first type and said processor is capable of responding to a change to a data object having said second type (see paragraphs [0317] and [0318]).

72. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Noma taken in view of Weber as applied to claim 18 above, and further in view of Lohmann.

73. As to claim 24, while the Noma–Weber system determines whether a second change to the interior section of the passenger vehicle is necessary because of the first change to the interior section of the passenger vehicle and execute the second change to the interior section of the passenger vehicle by updating said digital definition, Noma fails to disclose exporting a portion of the contents of said database in a format that can be used with/by a computer-aided design system different from said computer aided design system of said system.

74. Lohmann discloses a system further comprising a means for exporting a portion of the contents of said database in a format that can be used with/by a computer-aided design system different from said computer aided design system of said system (see “the database 18 contains all data or parameters necessary for completely describing or defining all relevant cabin components and installations for a prescribed project, on which all of the modules are working concurrently or in common” paragraph [0030],

lines 1–14 and “This solution proposal, which has been modified as necessary, is further coupled to a computer aided design (CAD) system 20 through a plot script which is not illustrated, i.e. the solution proposal is transferred to a parallel operating CAD system 20, where it is displayed and then output as a substantially conventional drawing. The parts lists 24 and the production contracts 25 are also output and transferred through respective defined interfaces automatically into the available parts list system 21 and the production planning system 22” in paragraph [0031]).

75. Noma, Weber, and Lohmann are analogous art because they are related to arrangement of passenger seats in an airplane/vehicle.

76. Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to utilize the feature of Lohmann in the Noma–Weber system because Lohmann develops a method whereby production documents (such as drawings, parts lists, supplementing or completing evaluations, e.g. device and equipment lists or mass distribution plans) are automatically prepared (see paragraph [0008]), and as a result, Lohmann reports the following improvements over his prior art: automatically define the spatial arrangement of structural components relative to each other, and the optimization thereof with respect to their functional positions (for example the visibility and/or reachability of components that must be accessed by passengers) and/or with respect to regulations and other requirements limiting the allowable arrangements, and/or with respect to the quantity or number of the components, i.e. an automated method in which the constantly repeated special knowledge of the designer and builder of a component arrangement (such as an aircraft cabin) is formulated as a

system of data and rules, which is then documented and can be repeatedly called-up and applied as needed in an automated manner for repetitious similar applications or other applications that share similar components, restrictions, and the like (see paragraph [0032]).

77. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noma taken in view of Weber as applied to claims 18 above, and further in view of Brauer.

78. As to claim 25, while the Noma–Weber system designs an interior section of a passenger vehicle to accommodate objects for the interior section of the passenger vehicle, the Noma–Weber system lacks determining the maximum number of seats that can fit in a section of the interior/configurable space.

79. Brauer discloses a system further comprising a means for determining the maximum number of seats that can fit in a section of the interior/configurable space, based on said parameters and the location of other objects in the interior (see claim 13).

80. Noma, Weber, and Brauer are analogous art because they are related to arrangement of passenger seats in an airplane/vehicle.

81. Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to utilize the determination of maximum number of seats of Brauer in the Noma–Weber system because Brauer develops a method for increasing passenger seating comfort at typical load factors, relative to that achieved using his prior art with seats of substantially equal dimensions and in an airplane of

fixed dimensions with a fixed number of seats (see col. 2, lines 18–26), and as a result, Brauer reports the following improvements over his prior art: producing seating configurations fully compliant with applicable FAA regulations, and seating arrangements which are more comfortable for passengers in an airplane of fixed dimensions and seat type at typical load factors because more passengers are seated next to an empty seat (see col. 16, line 64 to col. 17, line 4).

82. As to claim 26, Brauer discloses a system further comprising a means for determining a course of action that, if taken, will allow the addition of one extra row of seats, while maintaining compliance with said parameters (see claim 13).

Response to Arguments

83. Applicant's arguments filed 04 February 2008 and interview arguments conducted 03 March 2008 have been fully considered, but they are not persuasive.

84. Regarding the claim objections, the amendment corrected all deficiencies and the objections are withdrawn.

85. Regarding the rejections under 101, the amendment corrected all deficiencies and the rejections are withdrawn.

86. Regarding the rejections under 102 and 103. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection. In the instant rejection, Examiner has elaborated prior art disclosures of amended claims.

Conclusion

87. Examiner would like to point out that any reference to specific figures, columns and lines should not be considered limiting in any way, the entire reference is considered to provide disclosure relating to the claimed invention.

88. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan C. Ochoa whose telephone number is (571) 272-2625. The examiner can normally be reached on 7:30AM - 4:00 PM.

89. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

90. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. C. O./ 4/29/08

Examiner, Art Unit 2123

/Paul L Rodriguez/

Supervisory Patent Examiner, Art Unit 2123